

file

McKelvey

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Entomology and Plant Quarantine

Division: Screw Worm Control

Quarterly Report

Demonstration Units

September 30, 1936

Assistant Regional Supervisor: A. K. Mackey

College Station, Texas

1. Introduction: Owners and foremen of ranches where demonstration units are located are very interested in the work on their particular places. Each is giving the work splendid support. Many ranchmen are of the opinion that such demonstration work will be of benefit to them.
2. Extent of Screw Worm Infestation: It is the opinion of owners and foremen of the ranches where the demonstration units are located that infestation this year is about average. On the O. R. Davis Ranch at Brackettville it has been somewhat below average.
3. Statement of Work Done: A screened hospital was built at the Ranch Experiment Station at Sonora. The house was located at this station because it was felt that at this particular place it would be seen by more ranchmen than at any other place it might be located. Another reason for locating the hospital at this place was that it was on state and not privately owned land. It can remain at this place to be used by the Bureau of Entomology in cooperation with the Texas Experiment Station.

Three demonstration units were established in Texas. One of these was located near Hobbrownville which represents a typical South Texas cattle country; one was located near Brackettville which

THE NEW YORK PUBLIC LIBRARY

represents a rough sheep and goat country in a section of the state where the screw worm sometimes lives through the winter; and the third was established near Sonora in a country which represents a typical sheep, goat, and to some extent, cattle section of the Edwards Plateau.

Four live animal traps were constructed, these were turned over to the Research Division for testing.

In addition to the above, state livestock association meetings were attended and the Screw Worm Control campaign was discussed with leading ranchmen. Contacts were made with many county agents in the region to discuss the screw worm control work.

SCREENED HOSPITAL FOR RANGE LIVESTOCK

A screened hospital was constructed at the Ranch Experiment Station, Texas Sub-Station No. 14, Sonora, Texas. This house is 20' x 30', which includes a treating room 8' x 10', feed storage room 8' x 10', and a room for holding livestock, 20' x 22'. The room for holding livestock which have been infested with screw worms is so arranged that swinging gates make it possible to provide three separate pens. This arrangement was made in order that valuable horses or bulls might be tied in one pen and kept separate from sheep and goats. This arrangement also makes it possible to separate weaker animals, especially sheep and goats, from those with less serious wounds. It also furnishes a way of separating rams and bucks from other sheep or

represent a rough sheep and goat country in a section of the state where the rivers were somewhat lower through the winter; and the third was established near a town in a country which represents a typical sheep, goat, and horse country, and the section of the state.

Four live animal traps were constructed, three were turned

over to the Research Division for testing.

In addition to the above, a live livestock vaccination house was constructed and the live horse control campaign was discussed with leading veterinarians. Contacts were made with county agents in the region to discuss the new control work.

RESEARCH HOSPITAL FOR LIVE LIVESTOCK

A research hospital was constructed at the same location as the live livestock vaccination house, and was situated on the corner of the main road and the main road. The house is 20' x 30', which included a dressing room 8' x 10', feed storage room 8' x 10', and a room for holding livestock 20' x 20'. The room for holding livestock which have been infected with virus was in the rear of the building. It was made it possible to provide three separate pens. This arrangement was made in order that valuable horses or cattle might be held in one pen and kept separate from sheep and goats. This arrangement also makes it possible to separate other animals, especially sheep and goats, from those with less serious wounds. It also furnishes a way of separating rats and mice from other animals.

goats which are being held in the screened hospital.

Type of Construction

The foundation and corner posts together with center posts are concrete. The floors of the feeding room and the treating room are concrete. The lower three feet of the walls, with the exception of one side of the holding room, are made of hollow tile. The upper four feet are screened, with the exception of the feeding room which is completely closed with ear siding above the tile. The roof is galvanized iron. One side of the holding room is tiled about fifteen inches only with the remainder screened. This was done to give ventilation and to permit the construction of fly traps on the outside. The ceilings of the holding and treating rooms were screened.

Cost of Construction

The cost of the house was approximately seven hundred dollars. This included additional expense incurred in order to make the structure conform in general appearance to other buildings on the Ranch Experiment Station and to make the house suitable for both demonstration and research purposes. The house was built unusually strong in order to encourage ranchmen to build substantial structures. Every precaution was taken to make the house durable and flyproof.

Following are some comments of ranchmen who have screened hospitals on their ranches:

- (1) C. C. Canon, Sheffield, Texas. This man operates

ports which are being held in the reversed position.

Type of Construction

The foundation and corner posts together with the posts are concrete. The floor of the loading room and the landing room are concrete. The lower three feet of the walls with the exception of one side of the holding room, are made of hollow tile. The upper four feet are concrete, with the exception of the loading room which is completely faced with and lined about the walls. The roof is galvanized iron. One side of the holding room is tiled about 12 ft from inside only with the remainder concrete. This was done to give ventilation and to permit the collection of fly traps on the outside. The ceilings of the holding and landing rooms were concrete.

Cost of Construction

The cost of the house was approximately seven hundred dollars. This included additional expense incurred in order to make the structure suitable in general appearance to other buildings on the ranch and to make the house suitable for both demonstration and practical purposes. The house was built unusually strong in order to encourage tenants to build substantial structures. Every provision was taken to make the house durable and fireproof.

Following are some comments of tenants who have occupied the

house on their ranches:

(1) O. C. Green, Sheffield, Texas. This man operates

approximately fifty sections stocked with a large number of sheep and a smaller number of cattle and Angora goats. He uses a screened house for sheep and goats and this owner plans to enlarge the house which he has or build a new one that will accommodate late born calves as well as sheep and goats.

(2) Ole Parker, Iraan, Texas. His screened house is approximately 25' x 75'. The wall is completely screened. He is well pleased with his house, but said that if he were to rebuild he would not put in a concrete floor in the holding room.

(3) J. F. Runge, Christoval, Texas. This man operates a small ranch of three and one-half sections. His screened house is small, but he uses it constantly. He feels that it has paid for itself several times. He also commented that he would not put in a concrete floor if he were rebuilding.

(4) J. W. Owens, Ozona, Texas. He has used small screened houses for a number of years. He has recently completed a new one which is approximately 20' x 50'. The walls are concrete for about four feet and the balance screened. Mr. Owens is of the opinion that wounds heal in less than half the time that is required for them to heal outside where they are subject to reinfestation and have to be repeatedly treated with a repellent.

(5) V. I. Pierce, Ozona, Texas. He owns about ninety sections and has three screened hospitals. He uses them mostly for the care of sheep. He is very much in favor of a screened hospital and

approximately fifty sections stocked with a large number of sheep and a smaller number of cattle and Angus goats. He uses a several house for sheep and goats and this owner plans to enlarge the house which he has or build a new one that will accommodate into some native as well as sheep and goats.

(5) Ole Rafter, Texas. His enclosed house is approximately 25' x 75'. The wall is completely covered. He is well pleased with his house, but said that if he were to rebuild he would not put in a concrete floor in the holding room.

(6) J. W. Owens, Oregon, Texas. This man operates a small ranch of three and one-half sections. His enclosed house is small, but he uses it constantly. He feels that it has paid for itself several times. He also comments that he would not put in a concrete floor if he were rebuilding.

(7) J. W. Owens, Oregon, Texas. He has used small enclosed houses for a number of years. He has recently completed a new one which is approximately 30' x 30'. The walls are covered for about four feet and the balance covered. Mr. Owens is of the opinion that women feel less than half the time that is required for them to feel outside where they are subject to rainwater and have to be repeatedly treated with a repellent.

(8) V. L. Rector, Texas. He owns about ninety acres and has three enclosed hospitals. He uses them mostly for the care of sheep. He is very much in favor of a covered hospital and

said that his had paid for themselves several times. His walls are concrete to a height of about four feet with the balance screened. He had a concrete floor in his when it was first constructed, but later had it torn out.

(6) S. S. Bundy, Roosevelt, Texas. This man breeds pure-bred Rambouillets to sell for breeding purposes. He operates about ten sections. His screened hospital is a shed against a barn. He feels that a screened hospital is the most economical way for him to handle sheep that have been infested with screw worms.

Demonstration Units

The following figures give the approximate number of screw worm cases on which detailed records are being kept together with the number of those cases which were completed previous to September 1, 1936.

<u>Ranch</u>	<u>Location</u>	<u>Cases</u>	<u>Completed</u>
Aldwell Brothers	Sonora	425	223
Jonas Weil	Hebbroville	110	75
O. R. Davis	Brackettville	80	58
Totals		615	356

In addition to these, sixty-nine cases, taken as a group without detailed case records, have been released at the Jonas Weil Ranch. At the O. R. Davis Ranch about twenty cases were considered in a group demonstration and all have been released. Shearing is now in progress at the Davis and Aldwell Ranches and numerous shear

said that his had paid for thousands several times. His wife

are operate to a height of about four feet with the balance

retained. He had a separate floor in his when it was first con-

structed, but later had it torn out.

(d) C. E. Bandy, Houston, Texas. This man breeds pure-

bred hamboillars to sell for breeding purposes. He operates about

ten sections. His personal hospital is a shed against a barn. He

tells that a woman's hospital in the most economical way for him

to handle sheep that have been infected with screw worms.

Hamboillation Unit

The following figures give the approximate number of screw

worm cases on which detailed records are being kept together with

the number of those cases which were completed previous to September

1, 1935.

<u>Rank</u>	<u>Location</u>	<u>Cases</u>	<u>Completed</u>
Albani Brothers	San Antonio	125	225
James Wolf	Hobbsville	110	75
O. E. Davis	San Antonio	60	28
Totals		615	350

In addition to those, thirty-nine cases, taken as a group

without detailed case records, have been released at the James Wolf

Rank. At the O. E. Davis Rank about twenty cases were considered

in a group demonstration and all have been released. Showing is

now in progress at the Davis and Albani Rank and numerous other

out records are being taken.

At the present time it will be impossible to give extensive figures on the results obtained at the demonstration units. This is because of the cases mentioned above that have not been completed, and it is impossible to make complete summaries until these and other figures for the year are completed. At the conclusion of the season, a summary will be made of all individual cases and these will then be analyzed for each factor concerned. However, the following observations, based on the unsupervised figures, may be made.

Observations from Case Records of
Demonstration Units for Screw Worm Control

- (1) Careful and thorough treatment of the case is important if the wound is to heal quickly.
- (2) A reliable and conscientious man should do all of the treating if a maximum number of infected animals are saved.
- (3) Regular treatment of animals in worm trap is essential.
- (4) Benzol, properly used, is an excellent worm killer and leaves the wound in such shape that it will start to heal quickly. Owners, foremen, and workmen on ranches where the demonstration unit men are working say that it is better than anything they have used. Where benzol had been tried and discontinued it was found that the benzol had not been properly used.
- (5) The use of a cotton plug in wounds is well liked.
- (6) Pine tar oil is a satisfactory repellent. The owners and operators wish that it would stay on the wound better and repel flies

and records are being taken.

As the present time it will be impossible to give extensive

figures on the results obtained at the demonstration mills. This

is because of the cases mentioned above that have not been completed,

and it is impossible to make complete summaries until these and other

figures for the year are completed. At the conclusion of the season,

a summary will be made of all individual cases and those will then be

analyzed for each factor concerned. However, the following observations

made, based on the summarized figures, may be made.

Observations from some records of
demonstrations made for some time

(1) Careful and thorough treatment of the case is important

if the wound is to heal quickly.

(2) A reliable and conscientious man should do all of the

treating if a maximum number of infected animals are saved.

(3) Regular treatment of animals in worst case is essential.

(4) Benzol, properly used, is an excellent wound killer and

leaves the wound in such shape that it will start to heal quickly.

Owners, foremen, and workmen on ranches where the demonstration unit

men are working say that it is better than anything they have used.

Where benzol had been tried and discontinued it was found that the

benzol had not been properly used.

(5) The use of a cotton plug in wounds is well liked.

(6) Fine par oil is a satisfactory treatment. The owners and

operators wish that it would stay on the wound better and repel flies

for a longer time.

(7) Management practices which will prevent cases as far as possible are being followed.

- a. Annual vaccination of lambs and kids for soremouth on the two units in the sheep and Angora goat area has prevented many screw worm cases which ordinarily follow soremouth outbreaks.
- b. Lambing, docking, and castrating before the screw worm flies appear in the spring or early summer prevent many cases.
- c. Bulls have been taken out in time this summer to avoid late calving next year, and in that way avoid many worm infestations in the navels of young calves.
- d. Careful branding has avoided the type of burn which requires such a long time to heal.
- e. Branding and ear marking in warm damp weather has produced many worm cases.
- f. Most dehorning will be done during the winter.
- g. An emasculator properly used by one capable man during the screw worm fly season will prevent many cases which might come from castration by using a knife at that time.
- h. Pine tar oil is being used on ears of cattle at Jonas Weil Ranch to prevent screw worm trouble coming from

for a longer time.

(V) Management practices which will prevent cases as far as

possible are being followed.

a. Annual vaccination of lambs and kids for soremouth

on the two units in the sheep and Angus goat area

has prevented many severe worm cases which ordinarily

follow soremouth outbreaks.

b. Landings, docking, and castrating before the worm

worm flies appear in the spring or early summer pro-

vide many cases.

c. Bulls have been taken out in time this summer to a-

void late calving next year, and in that way avoid

many worm infestations in the navels of young calves.

d. Careful branding has avoided the type of burn which

produces such a long time to heal.

e. Branding and ear marking in warm damp weather has

produced many worm cases.

f. Hot branding will be done during the winter.

g. An emulsion properly used by one capable man

during the worm worm fly season will prevent many

cases which might come from contamination by using a

knife at that time.

h. Fine tar oil is being used on ears of cattle at Jones

Hill Ranch to prevent severe worm trouble coming from

Gulf Coast Tick infestations.

(8) Feeding some grain to convalescing animals in a worm trap gives them more strength.

(9) The amount of labor required for retreating sheep and goats in a worm trap would make a substantial payment on a screened hospital.

(10) Rams should be separated from other sheep in the worm trap.

(11) Approximately thirty-three percent of the worm cases in sheep on one of the units were true screw worms in the sub-orbital gland under the eye. This percentage will probably increase after all records are closed for the season. Many ranchmen are of the opinion that this trouble is caused by needle grass. Veterinarians and many others do not think that is the cause. Some method of preventing this infestation should be developed.

(12) Of the infested sheep brought to the worm traps, about twenty percent have died. However, this figure will be less when cases now in traps are released and records for the whole season are used to complete a percentage death loss. Previously the owners of two of the units lost about fifty percent of the infested sheep which they treated.

(13) At one of the demonstrations units a small group of sheep was retreated only when the wounds were reblown or reinfested

with these infections.

(8) Having some grain to encourage animals in a work

trap gives them more strength.

(9) The amount of labor required for extracting sheep and

goats in a work trap would make a substantial payment on a borrowed

hospital.

(10) Rams should be separated from other sheep in the work

trap.

(11) Approximately fifty-three percent of the worm cases

in sheep on one of the hills were from worms in the sub-orbi-

tal gland under the eye. This percentage will probably increase

after all records are closed for the season. Early treatment and of

the opinion that this trouble is caused by head lice. Veterin-

arians and many others do not think that is the cause. Some method

of preventing this infection should be developed.

(12) Of the infected sheep brought to the work traps, about

twenty percent have died. However, this figure will be less when

cases now in traps are released and records for the whole season are

used to compute a percentage death loss. Previously the records of

two of the hills lost about fifty percent of the infected sheep

which they treated.

(13) At one of the demonstrations with a small group of

sheep was retarded only when the wounds were treated or untreated

will remain in groups and will not be isolated from

with worms. The following figures are of interest in considering this group:

Number of cases treated in this manner:	52	Percent of Total
Reinfested once 30		57.7
Reinfested twice 16		30.8
Reinfested more than twice <u>6</u>		<u>11.5</u>
	52	100.0
Number of deaths:	11	21.2
Average number of days before first reinfestation	5.2	
Average number of days held in worm trap	16.5	

Live Animal Traps

Four small houses were constructed, each to hold two sheep or two goats. These houses were made of tongue and grooved car siding and were without floors. Three sides were screened with a fly trap of the Hodge type fastened to each of the screened sides. These small houses were approximately four feet square and four feet high. One of these is at College Station at the sheep barn of the Department of Animal Husbandry; one was assigned to Mr. Babcock of Sonora; another to Mr. Parish of Menard; and the fourth to Mr. Farman of Uvalde.

The purpose of these was to house animals which had been infested with screw worms and, while the animal would be protected from flies, the wound would be attractive to the true screw worm fly, and for that reason

with worms. The following figures are of interest in considering this

group:

Number of cases treated in this manner:	Percentage of Total
Reinfected once	30
Reinfected twice	16
Reinfected more than twice	8
	<u>54</u>
	100.0

Number of deaths: 11

Average number of days before

first reinfestation

Average number of days held in

live animal traps

Live animal traps

These four small houses were constructed, each to hold two sheep or

two goats. These houses were made of bamboo and provided ear sliding and

were without floors. Three sides were screened with a fly wire of the

hedge type fastened to each of the screened sides. These small houses

were approximately four feet square and four feet high. One of these is

at College Station at the sheep farm of the Department of Animal Husbandry;

one was assigned to Mr. Babcock of Denver; another to Mr. Parish of Kansas;

and the fourth to Mr. Pearson of Nevada.

The purpose of these was to house animals which had been infested

with screw worms and, while the animal would be protected from flies, the

wound would be attractive to the true screw worm fly and for that reason

flies might be caught in the trap attached to the side.

4. Type of Work Stressed: In addition to administering the work of the demonstration units, many individual contacts were made. The reason for making so many personal contacts was because of the writer's personal acquaintance with the men contacted. In the case of county agents, the writer was of the opinion that by discussing the Program in detail with them they would give much assistance to district supervisors and besides it was felt that in this way county agents might carry on the work after the present program was closed. Livestock practices which will prevent screw worm infestation have been stressed. The reason for this was that the writer felt that in most parts of the state district supervisors had contacted ranchmen as to the best method of treating, and that he could give further assistance by emphasizing the importance of any livestock and managerial practices which would prevent screw worm infestation from occurring.

5. Cooperation: County agents in counties where the demonstration units were located have given very valuable assistance. Other county agents have given the writer cooperation in stressing to the livestock men in their counties the importance of practices which will prevent screw worm infestation. The superintendent of the Ranch Experiment Station at Sonora gave splendid cooperation in supervising the construction of the screened hospital. Members of the Research Division of the Bureau of Entomology, stationed at Uvalde and at Sonora, gave the writer many helpful suggestions. State extension specialist,

files might be sought in the files attached to the files.

4. Type of Work Performed: In addition to administering the work

of the demonstration units, many individual contacts were made. The

reason for making so many personal contacts was because of the

writer's personal acquaintance with the men contacted. In the case

of county agents, the writer was of the opinion that by discussing

the program in detail with them they would give much assistance to

district supervisors and besides it was felt that in this way county

agents might carry on the work after the present program was closed.

livestock practices which will prevent some work infestation have been

stressed. The reason for this was that the writer felt that in most

parts of the state district supervisors had contacted ranchmen as to

the best method of treating, and that he could give further assistance

by emphasizing the importance of any livestock and managerial practices

which would prevent some work infestation from occurring.

5. Cooperation: County agents in counties where the demonstration

units were located have given very valuable assistance. Other county

agents have given the writer cooperation in stressing to the livestock

men in their counties the importance of practices which will prevent

some work infestation. The superintendent of the Hatch Experiment

Station at Las Alamos gave splendid cooperation in supervising the con-

struction of the summer hospital. Members of the Research Division

of the Bureau of Entomology, stationed at Omaha and at Denver, gave

the writer many helpful suggestions. State extension specialists

E. R. Wisbet, has helped the writer plan much of his work and has spent considerable time on each of his trips into livestock areas of the state promoting screw worm control campaigns. Members of the Department of Animal Husbandry of New Mexico A. and M. College, State College, New Mexico, have offered the Animal Husbandry Ranch Experiment Station for demonstration purposes.

6. Personnel: The following agents are conducting the work on the demonstration units listed opposite their names:

D. F. Callman, Jonas Weil Ranch, Hebbronville, Texas

W. E. Sherrill, Aldwell Brothers Ranch, Sonora, Texas

A. E. Walker, O. E. Davis Ranch, Brackettville, Texas

W. E. Wilsch, has helped the writer plan much of his work and has spent considerable time on each of his trips into livestock areas of the state preventing new worm control campaigns. Members of the Department of Animal Husbandry of New Mexico A. and M. College, State College, New Mexico, have offered the Animal Husbandry Experiment Station for demonstration purposes.

C. Personnel: The following agents are conducting the work on the demonstration units listed opposite their names:

- D. F. Callahan, Johns Hill Ranch, Hobbsville, Texas
- W. B. Wharrell, Alford Brothers Ranch, Socorro, Texas
- A. B. Wharrell, O. B. Davis Ranch, Hobbsville, Texas

The work under the project, and that in each of the other divisions is conducted in cooperation with the various and successful livestock agents who are working in the various divisions.

The following agents are working in the demonstration units: D. F. Callahan, Johns Hill Ranch, Hobbsville, Texas; W. B. Wharrell, Alford Brothers Ranch, Socorro, Texas; A. B. Wharrell, O. B. Davis Ranch, Hobbsville, Texas. The agents are working in the demonstration units in cooperation with the various and successful livestock agents who are working in the various divisions.

The work under the project, and that in each of the other divisions is conducted in cooperation with the various and successful livestock agents who are working in the various divisions.